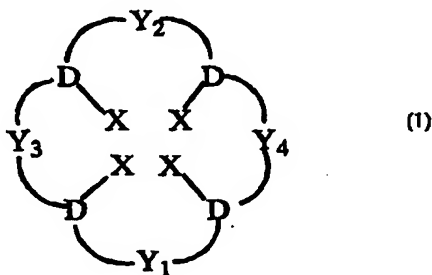




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| (21) International Application Number: PCT/US99/12475<br>(22) International Filing Date: 4 June 1999 (04.06.99)<br>(30) Priority Data:<br>09/096,753                      12 June 1998 (12.06.98)                      US<br>(71) Applicant: CARNEGIE MELLON UNIVERSITY [US/US];<br>5000 Forbes Avenue, Pittsburgh, PA 15213 (US).<br>(72) Inventors: COLLINS, Terrence, J.; 1331 Heberton Street,<br>Pittsburgh, PA 15206 (US). GORDON-WYLIE, Scott,<br>W.; 68 Ethan Allen Parkway, Burlington, VT 05401 (US).<br>HORWITZ, Colin, P.; 921 Farragut Street, Pittsburgh, PA<br>15206 (US).<br>(74) Agents: ETHRIDGE, Christine, R. et al.; Kirkpatrick &<br>Lockhart LLP, 1500 Oliver Building, Pittsburgh, PA 15222<br>(US). |  | (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG,<br>BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB,<br>GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,<br>KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,<br>MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,<br>SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW,<br>ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG,<br>ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ,<br>TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI,<br>FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent<br>(BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE,<br>SN, TD, TG).<br><br>Published<br>With international search report. |  |

(54) Title: LONG-LIVED HOMOGENOUS AMIDE CONTAINING MACROCYCLIC COMPOUNDS



## (57) Abstract

A robust compound is provided having formula (1) wherein Y<sub>1</sub>, Y<sub>2</sub>, Y<sub>3</sub> and Y<sub>4</sub> are oxidation resistant groups which are the same or different and which form 5- or 6-membered rings with a metal, M, when bound to D. D is a metal complexing donor atom, O or N. Each X is a position for addition of a substituent and, when D is N, each position is (i) not occupied such that a double bond is formed between D and an atom adjacent to D, or (ii) is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, phenoxy, halogen, halogenated alkyl, halogenated aryl, halogenated alkenyl, halogenated alkynyl, perhaloalkyl, perhaloaryl, a substituted or unsubstituted cycloalkyl ring, a substituted or unsubstituted cycloalkenyl ring, a substituted or unsubstituted saturated heterocyclic ring, a substituted or unsubstituted unsaturated heterocyclic ring, and at least one X is hydrogen, and when D is O, the position is not occupied.